Today
AT NORTHWESTERN

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SECOND OF TWO REPORTS
ON THE INSTITUTE FOR
LANGUAGE DISORDERS IN CHILDREN

Larry K.'s newly won agility enables him to successfully complete a jumping test, one part of Professor Myklebust's periodic examinations of the youngsters undergoing therapy.

The Brain-Injured Child:

A Challenge To Research And Education

Larry K. rushed home from his second grade class in a Chicago public school last year with important news for his parents: he had received his first "100" on a written spelling test. To Larry and his family this meant much more than the memorization of words. It constituted a victory, although not the final triumph, over several disorders caused by severe brain damage.

This brain injury had retarded Larry's ability to speak and to write, limited him in the use of his limbs, and hindered his visual perception. His speech problem, the least severe of his difficulties, was overcome in early childhood through home training conducted by his parents under the guidance of the Northwestern University Institute for Language Disorders in Children. When Larry entered school, his other handicaps became more apparent because they blocked the development of basic skills. His perfect spelling paper was one gauge of the progress he had made in weekly Institute therapy sessions conducted over an eighteen-month period.

There are thought to be many thousands of youngsters throughout the country with handicaps similar to Larry's —children whose ability to speak, read, write, or work with numbers has been curtailed by damage to the language centers of the brain. Most of them are not receiving effective help because there is so little public understanding of the nature of their difficulties.

Specialists agree that exact information on the incidence of language disorders in children would help to increase public awareness, a prerequisite for broadened programs of research and therapy.

Larry K.'s Progress Shown in a Therapy Session

Determining size and space relationships was at one time impossible for Larry. His progress in overcoming this visual perception problem is shown (left) by his ability to assemble representations of an apple, a pear, and an orange. Larry's improvement also is evidenced by the way he uses his hands to duplicate the size of an apple (center) and the length of a ruler (right) during a training session with Doris Johnson, an Institute therapist. Before he came to the Institute, Larry could not accomplish these apparently simple acts because his difficulties with visual perception have been complicated by apraxia, a condition limiting his capacity to relate his ideas to action.

Study Indicates Scope Of National Problem

This month the Institute completed the first study ever made to determine the incidence among children of language disorders resulting from brain damage. The three-year project, financed by a grant from the Wieboldt Foundation of Chicago, was conducted in public schools throughout the Chicago metropolitan area. The 1,000 children involved in the study were from seven to fifteen years old and represented a variety of social, economic, and cultural backgrounds.

The results indicate that brain injury has produced language disabilities of differing degrees in approximately five per cent of these pupils. In some, the ability to speak is impaired; in others, the capacity to read, write, or do arithmetic is restricted. A third group has various combinations of these limitations.

"Although the study was confined to the Chicago area, it provides an insight into the scope of the national problem," said Professor Helmer R. Myklebust, director of the Institute. "Frequently, school children with these language disorders are erroneously thought to be emotionally disturbed or even mentally deficient. The result is that their special educational needs are not met."

Before visiting the Institute at the age of three, Larry K. was one of those who had been labeled "mentally retarded." He had not yet learned to speak; he showed almost no interest in the world around him, and he was unable to look after his own needs.

Professor Myklebust's evaluation was that Larry's intelligence was normal and that his problems stemmed from brain damage. Larry's inability to speak (aphasia) was conquered in a year, but three other disorders became paramount when he approached school age.

First, although his muscles and reflexes were normal, he found it difficult to "tell" his limbs what he wished them to do, a condition known as apraxia. Second, his progress was limited by dysgraphia, which prevented him from relating his ideas to the process of writing. Finally, his visual perception was faulty—he could not determine size and space relationships.

These limitations created serious obstacles to adjustment and advancement in school. While Larry was rated excellent in speech and reading, he was unable to write no matter how hard he tried. Soon, he didn't try. He eventually avoided all projects involving the hands.

At that point a special program of Institute therapy was developed for Larry. Now, after a year and a half of weekly sessions, he is able to write, willingly participates in creative handiwork, and readily joins his schoolmates in their games and other activities.

Aid to Language-Handicapped: A New Frontier for Education

It is only during the past decade that science has probed the relationship between language disorders in children and brain damage. The concept therefore presents a new horizon not only for research but for the field of education, both in the instruction of the handicapped and the training of therapists.

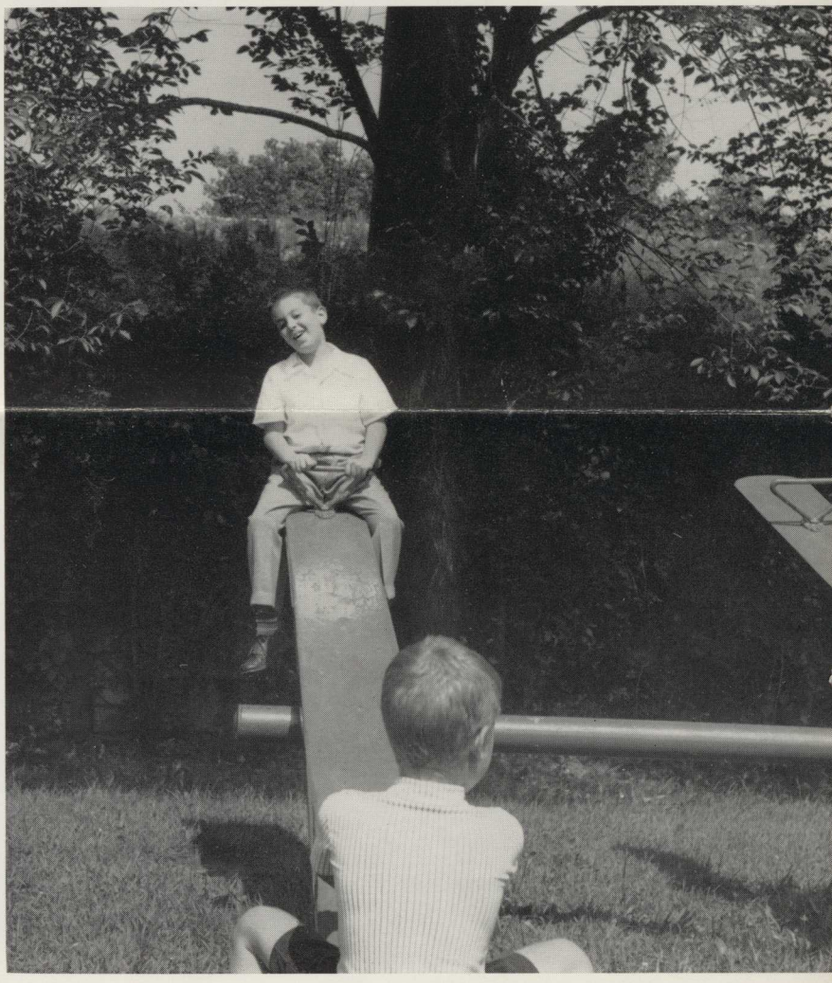
For the successful instruction of brain-damaged children, the Institute has determined that certain environmental conditions are essential. These youngsters learn best in small classes in which they are grouped not only by age but by degree of learning ability, social maturity, and emotional adjustment. Because they are easily distracted, the room used for their instruction should be simply furnished and relatively free from noise; interruptions of any kind should be kept to a minimum.

Since formal instruction occupies only a portion of the day, a child's improvement also depends on maintaining a similar set of controls over the remainder of his waking hours. His daily routine should not involve activities which present numerous distractions—even such presumably simple things as visiting a supermarket or department store, meeting guests in the home, or seeing a movie can overstimulate and bewilder a brain-damaged child.

Persons being prepared as language therapists by the Institute spend from one to three years in graduate training. Their principal fields of study—psychology, audiology, and speech correction—are combined with intensive clinical work in the examination and management of the language-handicapped. The Institute also presents courses to orient teachers and school administrators to the problem of children's language disorders.

Miss Johnson shows Larry how to write words more legibly. Apraxia, dysgraphia, and faulty visual perception caused him to misjudge the placement of certain letters and to vary their size. At one time these handicaps were so severe that, although Larry could spell verbally, he was unable to write.

Six years ago Larry had no interest in his surroundings or in associating with others. Now, at the age of nine, he enthusiastically shares in the varied activities of his classmates.



Playing near the Institute building, Larry completes a pitch with almost professional form. It is only in the past year that he has learned to command his arms and legs so perfectly.

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Institute Uses Multiple Tests to Find The Source of a Language Disorder

BRAIN-DAMAGED children who are undergoing therapy at the Northwestern University Institute for Language Disorders in Children are examined regularly to measure their improvement. At right, Professor Myklebust inspects Larry K.'s solution of a test problem. When youngsters with language disorders first visit the Institute they are given comprehensive tests to determine whether their handicaps result from structural defects of the speech organs, mental retardation, emotional disturbance, deafness, brain damage, or any combination of these basic causes.

THROUGH their work with children who have language disorders, members of the Institute staff hope to learn more about the development of speech in humans and about man's unique power to devise and utilize symbolic communication. At present, three levels of language development are recognized:

Inner language, the symbol system which makes possible the ability to think, to imagine, and to remember. Normally, this begins to develop during an infant's first eight months.

Receptive language, the ability to comprehend spoken or written words and the gestures of others. This capacity generally begins to develop when an infant is eight months old. From this point on, inner and receptive language evolve simultaneously, making it possible for a child to learn to speak and to read.

Expressive language, the ability to communicate ideas to others through spoken words, meaningful gestures, and writing and other symbols.

In the course of assisting youngsters with handicaps at these three language levels, Institute therapists are able to study closely the process by which humans learn to speak, read, write, and work with numbers.

The nature of this process is a question which has challenged men of learning throughout the ages. Scientific investigation of the problem may produce not only new therapy techniques but methods for preventing the loss or impairment of the capacity to use language.